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DEPARTMENT OF CIVIL ENGINEERING

Engineering Open House



University
of
Illinois

March 12 and 13 1965



OPEN HOUSE VISITORS
WELCOME TO CIVIL ENGINEERING

Civil Engineering is that branch of engineering most closely related to human affairs and to the goals of man. It is directly concerned with health, welfare, shelter, and environmental control, and involves transportation, water resources, urban renewal and the host of problems that concern man in his relation to society as well as man as an individual.

The exhibits presented here can reflect these major aspects of Civil Engineering only in a crude and imperfect way. However, we hope that they will indicate the breadth and scope of this important field of engineering, and that they will give you an insight into the opportunities of a career in this field.

In his studies of the problems in these broad areas, the Civil Engineer applies all the latest developments of modern science and technology. In structural mechanics and dynamics, in soil mechanics and foundations, in surveying and photogrammetry, in hydraulics, in transportation, and in construction engineering, the Civil Engineer can call on the most advanced mathematics and physical sciences. No less important from the point of view of science is the work in Sanitary Engineering which calls also on the biological sciences and chemistry to solve the problems of the control and disposal of waste, the purification of water, and the control of air pollution.

The program in Civil Engineering instruction and research is carried on in 12 different buildings on campus, the largest of which are Civil Engineering Hall, Talbot Laboratory, the Sanitary Laboratory and the Hydraulics Laboratory. All of these are open for inspection.

Students and staff members will be available to answer your questions and to help you in any way. We wish you a most pleasant and instructive stay on our campus.

Sincerely,

N. M. Newmark, Head
Department of Civil Engineering

Engineering Open House is presented in the hope that we, as students, can show a prospective student what he may expect during his college years and also some of the work he will be doing upon his graduation. We also want to provide all visitors a chance to view the work being done in our University to advance Civil Engineering technology.

Civil Engineering, being as all encompassing as it is, would be very difficult to represent in its entirety in our Open House. We have, however, tried to present a representative portion of the work in the field so that one may become acquainted with the different options as taught at the University of Illinois.

Care has been taken to provide students at each display to answer questions. We encourage everyone to take advantage of this service.

A counseling service is provided by the Civil Engineering Department at Open House Central in the Illini Union Ballroom. The advisors there are ready to answer questions about our curriculum and the Civil Engineering profession. We think this service will be of special value to prospective students and their parents.

We hope you enjoy your visit in our department and if, perhaps, you feel the need for a rest, interesting movies will be run continuously in Room 319 C.E.H.

Civil Engineering Open House
Committee

CIVIL ENGINEERING OPEN HOUSE EXHIBITS

Hydraulics and Hydrology

Water Resources Engineering involves the evaluation of the occurrence, distribution and use of water resources and the scientific analysis of the behavior of water in structures, water courses, and underground; concerned with power, irrigation and drainage, water supply, navigation, and related benefits to man.

The displays, all on the first floor of Civil Engineering Hall include

- Water Resources Planning
- Air Cushion Craft
- Electronically Controlled Rain
- Fluid Mechanics in Action
- Pneumatic Breakwater
- Surface Tension
- United States Geological Survey Display

Construction

Modern engineering science is applied to the planning and control of the building of engineering works involving the economical and efficient use of money, men, machines and materials; a constant search for new, better, and cheaper methods of construction and the development of construction practices that will produce results consistent with the intent of the designer. In the Civil Engineering Systems Laboratory, research is carried out on the application of modern mathematics and electronic digital computers to planning and decision making in construction.

Construction in Action -- Room 211 C.E. Hall

- Professional Activities
- Man with 1000 hands
- The Eighth Sea

- Automation in Construction
- C.P.M. Planning
- C.P.M. Scheduling
- Limit Resources
- Calendar Date Conversion
- Computer Analyzation

Information Display

Latest Research in Computer Oriented Management
System for Contractors

Movies

Highway Engineering

The field of highway engineering encompasses the various phases of highway planning, design and construction. The problems encountered in this field are relatively new and will continue to become more important in the future. The displays from this field of civil engineering will show the visitors some of the new highway designs and design requirements.

Exhibits in Room 309, C. E. Hall, include:

There is More to a Road than Meets the Eye
Getting a Million People to Work
Torture Test for Pavements
Stresses in a Pavement Under Load

Structural Engineering

In almost any civil engineering project encountered a structure of some sort will be present. The suitability of this structure and its components will have to be determined according to the loads which will be placed on the structure, the material to be employed, and the conditions under which it will be required to operate. The determination of these loads and the assignment of a particular component to withstand these loads is structural design or structures. The complexity and diversity of this option is amply demonstrated in the structures displays in 302 C. E. Hall.

Photo-Stress Display
Shell Structures
Model Study of Folded Plate Structures
Demonstration of Basic Principles of
Analysis of Simple Structures
Digital Computer Applications in Structural
Engineering
Model Demonstration in Structural Dynamics

Traffic

The higher speeds and increased volumes of traffic have increased the need for the scientific and technical study of highway traffic as a field of engineering. Methods of design, traffic measurement, speed detection and traffic control are just part of our traffic engineering display in Room 408 C.E.H.

Traffic Signal Demonstration Board
Radar Equipment Display
Parking Meters
Traffic Signs the World Over
Wiley Collection of Illinois Licence Plates
Traffic Signal Progression Control
Solve a Traffic Problem
The Signal Light Brain

Motor Vehicle Safety Display

The University's Highway Traffic Center has a set of six educational displays, called the "Safety Showcase," given to the University by the Automobile Manufacturers Association.

These exhibits, in Room 406 C. E. Hall depict some of the efforts taken to build greater safety into motor vehicles. The areas covered by these displays include tests on motor performance, research on visibility, passenger safety, steering and suspension, structural safety and stopping power.

Railway Engineering

Our modern railroad system is indeed an example of present day Civil Engineering. Increased traffic volumes and higher speeds have made necessary the application of modern engineering methods to a very basic part of our transportation system. Railroad engineering displays on the second floor of C. E. Hall include:

Building of a Railroad
Engineering Analysis for Railroads
Automation and the Railroads

All Aboard at Champaign

In conjunction with the I.C. Railroad, the railroad section of Civil Engineering, will sponsor a special display of modern railroad equipment. A guided tour through the locomotive and cars will be provided by the railroad at the siding near the University Steam Plant.

Sanitary Engineering

Because of the continuous population increase, the problems of water supply and waste disposal are becoming more acute and exacting every year. In order to meet these demands, the University offers courses involving the study of elementary sanitary engineering processes and advanced courses in water supply, wastewater treatment, radiological health, and air pollution. Displays in this field are shown on the first floor of C.E. Hall and include

Career Opportunities in Sanitary Engineering
Graduate Study in Sanitary Engineering
Sanitary Engineering in the Space Age
Conversion of Organic Wastes to Useful Energy

Chi Epsilon

Chi Epsilon is a Civil Engineering National Honor Fraternity founded at the University of Illinois in 1922. Its purpose is to pay honor to the C.E. student who, while maintaining a high scholastic average, has proven to be a well-rounded individual.

Chi Epsilon displays a working model of the Glen Canyon Dam with a critique given on its function, usefulness, and necessity. The exhibit is on the first floor of C. E. Hall.

Soil Mechanics

Since all engineering structures have their foundations on soil, the study of the behavior of these soils is necessary for proper functioning of the structures. The exhibits on display in 201 Talbot Laboratory emphasize some of the methods of soil investigation and analysis.

Quicksand!
Consolidation of Soils
Settlement of Structures
Theory of Consolidation
Consolidation Test
Types of Soils
Sampling Devices

Structural Research Laboratory

Visit the main laboratory floor in Talbot Laboratory where graduate research assistants will explain research programs currently underway and the associated test equipment and procedures.

Surveying - one of the oldest as well as one of the newest engineering sciences.

Surveying is the art of determining the positions of points on the earth's surface by means of measurements in three elements of space; namely, distance, direction, and elevation. Surveying in one form or another has been practiced throughout the world for thousands of years. More recently men have written down their observations in the form of topographic maps. The development of modern, high quality instruments in the past decade has led to a revolution in map making techniques.

Topic of 1965 display - The surveying exhibit will contrast the methods and equipment used in making maps 30 years ago with those used today, with an insight into future methods.

Professor H. M. Karara, of the Surveying Department will conduct guided tours through the aerial photogrammetric department. Here ultra modern devices will be shown, demonstrating how surveying with a camera is accomplished.

The Survey Display is on the second floor of the Woodshop Building on Springfield Avenue, 1-1/2 blocks east of Wright Street.

DEPARTMENT OF CIVIL ENGINEERING
1965 OPEN HOUSE ORGANIZATION

OPEN HOUSE COMMITTEE

A. V. Vermiglio - Senior Chairman
L. J. Wrobel - Junior Chairman
R. N. Wright - Faculty Advisor

EXHIBITS

<u>Area</u>	<u>Student Chairman</u>	<u>Faculty Advisor</u>
Hydraulics	A. J. Papp B. Wilhelmsen	E. R. Holley
Construction	A. C. Brooks L. Zimmerman	L. R. Shaffer
Highways	Q. L. Robnett L. B. Salz	E. J. Barenberg
Structures	J. G. Kalus	W. H. Walker
Traffic	D. G. Miller	W. T. Gruen
Sanitary	G. R. Steiner J. F. Manwaring	R. E. Speece
Railroads	R. Seremak	W. W. Hay
Chi Epsilon	R. Reynolds	W. A. Oliver
Soil Mechanics	P. C. McLaughlin W. L. Dennis	T. K. Liu
Structural Research Laboratory		J. P. Cannon
Surveying	C. L. Hoff J. C. Uecker	G. Gracie

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